

## CLAIMS

Therefore, having thus described the invention, at least the following is claimed:

1    1. A method for managing interaction with a presentation of a tree structure in a  
2    graphical user interface, the method comprising the steps of:

3                displaying a tree structure on a first portion of a graphical user interface;

4                receiving a search request for an object in the tree structure having a

5                predefined value via a second portion of the graphical user interface;

6                displaying a search result in a third portion of the graphical user interface, the  
7    search result comprising one or more locations that satisfy the search request; and

8                in response to selection of one of the locations, modifying the tree structure to

9    display the selected location of the object having the predefined value.

1    2. The method of claim 1, wherein the step of modifying the tree structure to

2    display the selected location comprises expanding the tree structure.

1    3. The method of claim 1, wherein the step of modifying the tree structure to

2    display the selected location comprises highlighting the object having the predefined  
3    value.

1    4. The method of claim 1, wherein the step of receiving a search request for an

2    object comprises the step of receiving text via a text box displayed in the second  
3    portion of the graphical user interface.

1       5.     The method of claim 1, wherein the third portion of the graphical user  
2     interface comprises a pop-up window.

1       6.     The method of claim 1, wherein the tree structure comprises one or more  
2     parent objects, at least one of the parent objects having one or more child objects.

1       7.     The method of claim 6, wherein the tree structure represents the contents of a  
2     computer.

1       8.     The method of claim 1, wherein the tree structure comprises a root object, one  
2     or more first-level objects, one or more second-level objects, and one or more third-  
3     level objects.

- 1    9.     The method of claim 8, wherein:
- 2                the tree structure correlates to a model of a printed circuit board used in an x-
- 3        ray inspection control system, the printed circuit board having one or more
- 4        components having one or more pins soldered to the printed circuit board;
- 5                the root object corresponds to a family object that specifies a type of solder
- 6        joint;
- 7                the one or more first-level objects correspond to a package object that specifies
- 8        a type of component;
- 9                the one or more second-level objects correspond to an instance that specifies a
- 10      unique designator for a package; and
- 11                the one or more third-level objects correspond to a pin object that specifies a
- 12      unique pin number for a specific component.

1    10. A system for managing interaction with a presentation of a tree structure in a  
2    graphical user interface, the system comprising:

3              logic configured to:

4                  display a tree structure on a first portion of a graphical user interface;

5                  receive a search request for an object in the tree structure having a

6                  predefined value via a second portion of the graphical user interface;

7                  display a search result in a third portion of the graphical user interface,

8                  the search result comprising one or more locations that satisfy the search

9                  request; and

10                 modify, in response to selection of one of the locations, the tree

11                 structure to display the selected location of the object having the predefined

12                 value;

13                 a processing device configured to implement the logic; and

14                 a display device configured to support the graphical user interface.

1    11. The system of claim 10, wherein the logic is further configured to modify the  
2    tree structure to display the selected location by expanding the tree structure.

1    12. The system of claim 10, wherein the logic is further configured to modify the  
2    tree structure to display the selected location by highlighting the object having the  
3    predefined value.

1    13.    The system of claim 10, wherein the logic is further configured to receive the  
2    search request for an object via a text box displayed in the second portion of the  
3    graphical user interface.

1    14.    The system of claim 10, wherein the third portion of the graphical user  
2    interface comprises a pop-up window.

1    15.    The system of claim 10, wherein the tree structure comprises one or more  
2    parent objects, at least one of the parent objects having one or more child objects.

1    16.    The system of claim 15, wherein the tree structure represents the contents of a  
2    computer.

1    17.    The system of claim 10, wherein the tree structure comprises a root object, one  
2    or more first-level objects, one or more second-level objects, and one or more third-  
3    level objects.

- 1    18. The system of claim 17, wherein:
- 2                 the tree structure correlates to a model of a printed circuit board used in an x-
- 3         ray inspection control system, the printed circuit board having one or more
- 4         components having one or more pins soldered to the printed circuit board;
- 5                 the root object corresponds to a family object that specifies a type of solder
- 6         joint;
- 7                 the one or more first-level objects correspond to a package object that specifies
- 8         a type of component;
- 9                 the one or more second-level objects correspond to an instance that specifies a
- 10         unique designator for a package; and
- 11         the one or more third-level objects correspond to a pin object that specifies a unique
- 12         pin number for a specific component.

1    19. A computer program embodied on a computer-readable medium for managing  
2    interaction with a presentation of a tree structure in a graphical user interface, the  
3    computer program comprising logic configured to:  
4         display a tree structure on a first portion of a graphical user interface;  
5         receive a search request for an object in the tree structure having a predefined  
6         value via a second portion of the graphical user interface;  
7         display a search result in a third portion of the graphical user interface, the  
8         search result comprising one or more locations that satisfy the search request; and  
9         modify, in response to selection of one of the locations, the tree structure to  
10      display the selected location of the object having the predefined value.

1    20. The computer program of claim 19, wherein the logic is further configured to  
2    modify the tree structure to display the selected location by expanding the tree  
3    structure.

1    21. The computer program of claim 1, wherein the logic is further configured to  
2    modify the tree structure to display the selected location by highlighting the object  
3    having the predefined value.

1    22. The computer program of claim 19, wherein the logic is further configured to  
2    receive the search request for an object via a text box displayed in the second portion  
3    of the graphical user interface.

1    23.    The computer program of claim 19, wherein the third portion of the graphical  
2    user interface comprises a pop-up window.

1    24.    The computer program of claim 19, wherein the tree structure comprises one  
2    or more parent objects, at least one of the parent objects having one or more child  
3    objects.

1    25.    The computer program of claim 24, wherein the tree structure represents the  
2    contents of a computer.

1    26.    The computer program of claim 19, wherein the tree structure comprises a root  
2    object, one or more first-level objects, one or more second-level objects, and one or  
3    more third-level objects.

- 1 27. The computer program of claim 26, wherein:
- 2       the tree structure correlates to a model of a printed circuit board used in an x-
- 3       ray inspection control system, the printed circuit board having one or more
- 4       components having one or more pins soldered to the printed circuit board;
- 5            the root object corresponds to a family object that specifies a type of solder
- 6       joint;
- 7            the one or more first-level objects correspond to a package object that specifies
- 8       a type of component;
- 9            the one or more second-level objects correspond to an instance that specifies a
- 10      unique designator for a package; and
- 11      the one or more third-level objects correspond to a pin object that specifies a unique
- 12      pin number for a specific component.

1    28.    A system for managing interaction with a presentation of a tree structure in a  
2    graphical user interface, the system comprising:  
3                a means for displaying a tree structure on a first portion of a graphical user  
4    interface;  
5                a means for receiving a search request for an object in the tree structure having  
6    a predefined value via a second portion of the graphical user interface;  
7                a means for displaying a search result in a third portion of the graphical user  
8    interface, the search result comprising one or more locations that satisfy the search  
9    request; and  
10              a means for modifying the tree structure to display the selected location of the  
11   object having the predefined value in response to selection of one of the locations.

1    29.    The system of claim 28, wherein the means for modifying the tree structure  
2    logic expands the tree structure.

1    30.    The system of claim 30, wherein the tree structure comprises a root object, one  
2    or more first-level objects, one or more second-level objects, and one or more third-  
3    level objects.

- 1    31.    The system of claim 30, wherein:
- 2                 the tree structure correlates to a model of a printed circuit board used in an x-
- 3         ray inspection control system, the printed circuit board having one or more
- 4         components having one or more pins soldered to the printed circuit board;
- 5                 the root object corresponds to a family object that specifies a type of solder
- 6         joint;
- 7                 the one or more first-level objects correspond to a package object that specifies
- 8         a type of component;
- 9                 the one or more second-level objects correspond to an instance that specifies a
- 10         unique designator for a package; and
- 11         the one or more third-level objects correspond to a pin object that specifies a unique
- 12         pin number for a specific component.